Utah's AIS Rapid Response Plan

Much of Utah's AIS Management Plan is focused upon preventing new, AIS from arriving and becoming established, or controlling the spread of those that are currently established. However, another important function of this plan is a coordinated rapid response to finds of newly imported AIS or to the spread of already established AIS. In the past, individual agencies worked virtually alone trying to intercept AIS. Heretofore finds of new or spreading invasions of AIS in Utah were often dependent upon chance, and more often than not, reported by an observant public. Responses outside of permitting systems were poorly coordinated, if at all. In the future, finds of AIS will be a result of well executed searches, and a well planned, timely and coordinated response could be expected. As such, this portion of Utah's AIS Management Plan is a series of rapid response protocols adapted and modified in-part from Idaho's 2007 Aquatic Nuisance Species Plan.

The protocols are based upon 10 rapid response objectives as follows:

- Verify reported AIS detection
- Immediately notify relevant natural resource managers and Utah's AIS Task Force
- Define extent of colonization
- Set-up an appropriate interagency response management team, if needed
- Establish internal and external communication systems
- Organize available resources (personnel, equipment, funds, etc.)
- Prevent further spread via quarantine and pathway management
- Apply available or relevant control and containment actions, and seek mitigation
- Institute long-term monitoring
- Evaluate effectiveness and modify the Rapid Response Plan, if needed

Rapid Response Objective 1: Verify Reported AIS Detection

Strategy: The agency that receives or accepts responsibility for handling the initial report for the presence of an AIS must immediately contact Utah Division of Wildlife Resources for assistance to confirm a report's validity and determine an emergency response.

Task 1: Interview the reporter(s) to validate potential AIS detection.

- Record details of the find location such as GPS delineation, name of the water body or stream length number, prominent landmarks, highway mile marker, or other information about where the suspect species was found.
- Collect pertinent contact information for the reporter(s)--name, address, telephone (home, work and cell), and email.
- Secure an estimate of the number, density, and extent for infestation (colonies or number of individuals) of the species found.
- Document the date and time of sighting(s).
- Note other relevant site conditions (access limitations, etc.)

Task 2: Validate AIS identification as soon as possible via a physical sample as follows:

• Obtain a digital or other photograph (with scale indicator), if possible.
• Secure and preserve dead samples of the species, if possible.
• Arrange a site visit, when feasible, by a team of recognized experts.
• If recognized experts cannot feasibly reach the site within 24 hours, arrange to ship samples and other evidence (e.g., photographs) via Express Mail Service. In the case of photographs, digitize and email to the experts.
Note: Prior to shipping samples, obtain guidance from recognized experts, seeking existing protocols regarding handling of the sample (e.g. desired quantity, where and how to collect and deliver the sample, preservatives, refrigeration, etc.).

Task 3: While proceeding with subsequent response activities described below, obtain secondary visual confirmation of AIS identification via a different expert, preferably an expert who can provide definitive confirmation based on genetic or histological analysis.

Rapid Response Objective 2: Immediately notify relevant natural resource managers and Utah's AIS Task Force

Strategy: The agency that receives or accepts responsibility for handling the initial report must immediately ensure that all parties having jurisdiction in response decisions or technical support are quickly engaged. Rapidly inform any other interested parties.
Note: In the case of an interdiction that results in complete destruction of the AIS and a successful decontamination of the introduction vector (e.g. boat or equipment) ensues, file pertinent reports; no further coordination is needed.

Task 1: Within the first 24 hours or as soon as practical after a physical sample is visually confirmed to be an AIS by a recognized expert, notify relevant natural resource managers and Utah's AIS Task Force.
Note: The notification list must be updated at least annually.

Task 2: Secure verification of notifications to confirm that parties on the contact list, did in fact, receive notification (e.g., Internet list server response confirmation requirement, phone call-backs, etc.).

Rapid Response Objective 3: Define Extent of AIS Colonization

Strategy: The appropriate lead agency(s) with authority where the initial AIS sighting(s) occurred, in partnership with other involved agencies and organizations ("response team"), must rapidly determine the extent of colonization for the newly discovered AIS to guide subsequent management decisions, including survey design.

Task 1: Identify a lead monitoring coordinator to maximize the effectiveness of survey efforts by the "response team."

Task 2: Determine geographic extent and demography of AIS infestation, including upstream and downstream areas and connected water bodies. Also survey nearby water bodies with vulnerability to the same vectors.

Task 3: Identify any potential facilities (e.g., hydropower, fish hatcheries, irrigation systems, etc.) that could be impacted by the AIS. In concurrence with

the lead agency for the "response team," advise operators of their predicament and invite them to become engaged as cooperators with the "response team."
Task 4: Ensure that surveys are completed and that results are reported through responsible tracking organizations.

Rapid Response Objective 4: Set-up an appropriate interagency "response team," if needed

Strategy: The appropriate lead agency(s) with authority where the initial AIS sighting(s) occurred, in concurrence with other involved agencies and organizations ("response team"), must use the Incident Command System as a foundation for decision-making processes in order to expedite decision-making, information sharing; avoid duplication; and minimize authority conflicts, while preserving flexibility for adaptive management.

Task 1: Appoint Incident Commander(s).
Note: Where multiple agencies have lead jurisdiction, a unified command structure should be used. The incident commander(s) will serve as the focal point for coordinating implementation of the rapid response plan, and in cooperation with the overall responses team, will establish other components of an Incident Command System organization as needed. Where time allows, the incident commander(s) will seek collaborative decision-making by the entire team of involved response agencies. For a multi-state infestation where there is no initial consensus on the incident commander role, this role will default to the appropriate U.S. Fish and Wildlife Service Regional AIS Coordinator until the relevant authorities in concurrence reach agreement on incident command.
Task 2: The incident commander(s) shall convene a meeting and/or conference call involving the "response team" and any other relevant agencies or cooperators and conduct the following:
• Coordinate "response team" notifications;
• Use the Incident Command System as a foundation for the "response team's" organization, involving lead representatives of local, tribal, state, provincial, and/or federal governments that have legal authority over the response and interested cooperators, organizing as appropriate by specific Incident Command System staff positions (e.g. safety officer) and divisions (e.g. operations) for the decision-making processes;
• Represent the "response team" to the various agencies;
• Facilitate a decision-making process that considers consensus processes and cascading levels of authority within individual agencies and existing cooperative agreements;
• Facilitate development of "response team" priorities; and
• Establish planning timelines for the "response team's" priorities (e.g. 2 weeks vs. 2 months vs. 2 years);
Task 3: The incident commander(s) should develop a technical advisory team that includes experts from outside the region to provide advice about "response team" activities and priorities.

Rapid Response Objective 5: Establish internal and external communication systems

Strategy: Incident Commander(s) must develop an information center to ensure consistent and effective communication to interested internal and external stakeholders, including the media and public.

Task 1: Notify and educate affected landowners, and where appropriate, gain their written permission to access property for "response team" activities.
Task 2: Notify and educate potentially affected water users and water-rights holders.
Task 3: Develop a public information strategy, press packets, press release processes, and press conferences.
Task 4: Develop and implement general public education and outreach.
Note: Since there are a variety of educational materials used between regions and states, assure coordination and perhaps agreement during a multi-state infestation on materials to be used.

Rapid Response Objective 6: Organize available resources (personnel, equipment, funds, etc.)

Strategy: Incident Commander(s) in cooperation with the "response team" must provide sufficient resources to initiate control or containment actions and associated activities (including acquisition of required permits).

Task 1: Develop estimates for staffing needs, facilities and equipment, and funding.
Task 2: Identify potential sources for staff, facilities, equipment, and funds.
Task 3: Secure commitments from the "response team" agencies for needed staff, facilities, equipment and funds.
Task 4: Ensure mechanism for dispersal of funds is in place, and when the funds are needed, that flow of dollars occurs expeditiously.
Task 5: If necessary, pursue declarations of emergency by elected officials.

Rapid Response Objective 7: Prevent Further Spread Using Quarantine and Pathway Management

Strategy: Incident Commander(s) and agencies with regulatory jurisdiction must minimize all vectors that might further spread the original infestation.

Task 1: Evaluate risks, dispersal vectors, including movement by humans, fish and wildlife, water traffic, water flow, and other physical processes.
Task 2: Restrict dispersal pathways, where feasible, including the following or similar measures that are suitable for individual species:
• Quarantine any hatcheries or aquaculture operations that are likely to spread the AIS or their larvae via transfers outside the affected watershed(s);
• Quarantine infested water bodies as needed to prevent spread by watercraft or other vectors and follow any existing protocols;
• Assess the likely movement of boats that recently used the infested water body

to identify risk and inspection needs in other water bodies;
• Establish inspection requirements and decontamination protocols for boats and equipment, and provide decontamination opportunity;
• Ensure that AIS "alert" signs are adequately deployed;
• Develop and implement Hazard Analysis and Critical Control Point plans to ensure that local, state, tribal or federal government response personnel do not further spread the original infestation;
• If possible, stop or slow water releases to potentially un-infested sites;
Note: Consider drawing water from below the thermocline; and
• Install physical barriers to affect AIS movement.

Rapid Response Objective 8: Apply available or relevant control and containment actions, and seek mitigation

Strategy: The Incident Commander(s) in collaboration with the "response team" must evaluate management options. After which, the "response team" must proceed with either eradication and control efforts or containment, including mitigation.

Task 1: Decide if eradication is possible based on rapid analysis of population dynamics and pathways of spread. Consider the following:
• Anticipated cost of eradication effort relative to available funding;
• Type of water body (contained lake, main-stem reservoir, tributary reservoir, small stream, large river, estuary, or water diversion facility);
• Type of substrate (e.g., rocks that allow species attachment on their under sides where chemicals may not reach them).
• Extent of population distribution (isolated vs. widespread, coupled with *a priori* assumptions about the spread of the AIS before detection);
• AIS life stage(s) to be treated;
• Amount of water in a lake, reservoir or waterway to be treated. Consider the following:
1. Potential for the lake or reservoir to be drawn down or river flows to be reduced before treatment;
2. Inflow sources, including springs, and potential to regulate that inflow;
• Assess circulation patterns in a water body as part of the treatment strategy;
• Determine spreading pattern of AIS population within the water body;
• Assess treatment impacts and needed mitigation regarding state sensitive species or federally listed threatened or endangered species or critical habitats, particularly Section 7 consultation; and
• Consider special status of affected water bodies as follows:
1. Water use designation (e.g. drinking water);
2. "Wild and Scenic" river designation;
3. Wilderness area;
4. Potential impact to cultural resources;
5. Department of Defense or other restricted access areas;
6. Tribal lands;
7. Clean Water Act 303(d) listing; and
8. Beneficial Uses of water bodies.

Task 2: If eradication is deemed feasible, select appropriate methods.
Task 3: If eradication is not possible, develop control objectives and design/select appropriate control measures.
Task 4: Obtain relevant permits and regulatory agency concurrence
• Determine the permits and other regulatory reviews required for chosen eradication or control methods, including any applicable emergency provisions;
• Assess modifying any existing permits or develop new permits;
• Assign lead person from each regulatory agency to facilitate permit approval in a timely manner within their respective agency;
• Obtain a Federal Insecticide, Fungicide and Rodenticide Act, Federal Crisis Exemption (e.g., 40 C.F.R. PART 166), if the known or accepted methods of eradication are not currently permitted;
• Determine if an environmental impact statement or environmental assessment is required, and if so, begin that work (use template for environmental assessments where available);
• Secure needed National Pollutant Discharge Elimination System permits, if needed; and
• Initiate Endangered Species Act Section 7 consultations if needed by contacting appropriate U.S. Fish and Wildlife Service field offices.
Task 5: Implement eradication or control/containment strategies and secure mitigation compensation
• Agencies collaborate to coordinate and deploy field resources
• Establish schedule for frequent team meetings to resolve operational issues that cross jurisdictional interests.

Rapid Response Objective 9: Institute Long-Term Monitoring

Strategy: Incident Commander(s) in collaboration with the "response team" must provide data for adaptive management and long-term evaluation efforts.

Task 1: Design a monitoring program to evaluate the status of the AIS. Monitoring activities should be carried out in coordination with other field operations, such as environmental monitoring to meet permit or other regulatory compliance requirements (e.g. National Pollutant Discharge Elimination System permits).
Task 2: Disseminate findings through an easily accessible, consolidated, coordinated real-time database and list serve (e.g. 100th Meridian Initiative's website).

Rapid Response Objective 10: Evaluate effectiveness and modify the Rapid Response Plan as needed

Strategy: The "response team," in order to allow for adaptive management by assuring feedback on the efficacy of response actions and the effectiveness of the Rapid Response Plan, will enhance long-term preparedness for responses to other AIS introductions.

Task 1: Conduct a follow-up evaluation by "response team" organizations and other interest groups to identify opportunities for improving rapid response

capacity. Disseminate “lessons learned” to other interested organizations (e.g. states, 100th Meridian Initiative, regional panels and river basin teams).
Task 2: Revise the Rapid Response Plan and associated documents/guidelines based on evaluation and long-term monitoring results.
Task 3: As resources allow, develop and implement a research plan that evaluates the associated ecological and economic impacts of the AIS invasion, the effectiveness of management interventions, and negative consequences of management interventions beyond that required by permits.
Task 4: Determine the need for long-term funding for the current AIS management effort, and seek this funding as warranted by meeting with state and federal legislators.